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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,836	11/13/2003	Mark R. Gordon	CHA920030026US1	9524
23550 7590 06/16/2008 HOFFMAN WARNICK LLC 75 STATE STREET 14TH FLOOR ALBANY, NY 12207			EXAMINER ADAMS, CHARLES D	
			ART UNIT 2164	PAPER NUMBER
			NOTIFICATION DATE 06/16/2008	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTOCommunications@hwdpatents.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/712,836	<b>Applicant(s)</b> GORDON, MARK R.	
	<b>Examiner</b> CHARLES D. ADAMS	<b>Art Unit</b> 2164	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-12, 15-21 and 23-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-12, 15-21, 23-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Remarks***

1. In response to communications filed on 21 February 2008, claims 1, 10, and 19 are amended and claims 5, 13-14, and 22 are cancelled. Claims 1-4, 6-12, 15-21, and 23-26 are pending in the application.

### ***Specification***

2. The disclosure is objected to because of the following informalities:

In claim 10 of the instant application, a 'recordable medium' is claimed. However, the specification does not define 'recordable medium'. Thus, it is unclear whether or not claim 10 and its dependent claims are directed towards statutory subject matter.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 101***

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-4 and 6-9 are rejected under 35 U.S.C. 101 because the claims lack the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101. They are clearly not a series of steps or acts to be a process nor are they a combination of chemical compounds to be a composition of matter. As such, they fail to fall within a statutory category. They are, at best, functional

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descriptive material *per se*. Though a system is claimed in 1-4 and 6-9, no there is no hardware or necessary physical articles claimed.

5. Claims 10-12, and 15-18 are rejected under 35 U.S.C. 101 because the claims lack the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101. They are clearly not a series of steps or acts to be a process nor are they a combination of chemical compounds to be a composition of matter. As such, they fail to fall within a statutory category. They are, at best, functional descriptive material *per se*.

In this case, claims 10-12 and 15-18 are a program product stored on a 'recordable medium', which is not clearly a computer readable medium.

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." Both types of "descriptive material" are nonstatutory when claimed as descriptive material *per se*, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lawry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994).

Merely claiming nonfunctional descriptive material, i.e., abstract ideas, stored on a computer-readable medium, in a computer, or on an electromagnetic carrier signal,

does not make is statutory. See *Diehr*, 450 U.S. at 185-186, 209 USPQ at 8 (noting that the claims for an algorithm in *Benson* were unpatentable as abstract ideas because “[t]he sole practical application of the algorithm was in connection with the programming of a general purpose computer.”).

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-3, 6-12, 15-21, and 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bakalash et al. (US Patent 6,385,604) in view of Brickell et al. (US Patent 6,678,676), and further in view of Witkowski et al. (US Patent 7,379,933).

As to claim 1, Bakalash et al. teaches a summary table manager for managing summary tables in an OLAP (OnLineAnalytical Processing database system) (see Bakalash et al. 10:47-11:8), comprising:

Bakalash et al. does not explicitly teach:

a query analysis system that displays a set of proposed summary tables based on query statistics gathered for a set of inputted queries; and

Brickell et al. teaches:

a query analysis system that displays a set of proposed summary tables based on query statistics gathered for a set of inputted queries (see 5:50-6:15); and

Bakalash et al. as modified teaches:

a system for calculating a performance measure for each of the proposed summary tables based on the query statistics (see Brickell et al. 5:50-6:15), wherein the performance measure is a combination of both time saved and summary table size (see 9:15-25), wherein the performance measure for a proposed summary table is determined by identifying a first set of execution queries that utilized characteristics exactly matching a proposed summary table (see 6:18-46 and 5:66-67),

Bakalash et al. as modified does not explicitly teach:

identifying a second set of execution queries that utilized different subsets of characteristics found in the proposed summary table,

Witkowski et al. teaches:

identifying a second set of execution queries that utilized different subsets of characteristics found in the proposed summary table (see 4:52-55 and 6:52-53 and Table 1, in column 4. Query 1 exactly matches MV1, while Query 2 can be answered with different subsets of characteristics from both MV1 and MV2),

Bakalash et al. as modified teaches:

and merging performance data from first set of execution queries with performance data from the second set of execution queries (see Brickell et al. Table 1, column 6, and 6:35-46 and 8:29-65. Summary tables are measured in relation to each query that would have used the summary table. Also see 9:15-33).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Bakalash et al. by the teachings of Brickell et al., since Brickell et al. teaches “The one or more summaries are preferably determined by causing the processor to propose a number of summaries, determine the improvement achieved by using the proposed summaries and, select one or more of the summaries in accordance with the improvement achieved using the summary. Thus, this ensures that summaries which result in the most benefit are used” (see 2:28-34).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have further modified Bakalash et al. by the teachings of Witkowski et al., since Witkowski et al. teaches that “Furthermore, if some but not all of the groupings in an aggregate query can be computed from a summary table, then query rewrite is barred, even though there may be summary table from which some of the groupings in the aggregate query may be computed. In this case, a database system is forced to fully compute the aggregate query from the base tables, a far more expensive way to compute an aggregate query than computing it from a summary table. Based on the foregoing, it is desirable to provide a query rewrite process not subject to the limitation discussed above” (see 5:33-42).

As to claims 2, 11, and 20, Bakalash et al. as modified teaches wherein the set of proposed summary tables is determined based on characteristics utilized in the set of inputted queries (see Brickell et al. 6:16-46).

As to claims 3, 12, and 21, Bakalash et al. as modified teaches wherein the performance measure comprises an estimated amount of time saved for using the proposed summary tables (see Brickell et al. 3:19-24)

As to claims 6, 15, and 23, Bakalash et al. as modified teaches further comprising a system for normalizing performance measures determined for summary tables that are based on different fact tables (see Brickell et al. 8:35-44).

As to claims 7, 16, and 24, Bakalash et al. as modified teaches further comprising a performance analysis system that determines an actual performance value of each proposed summary table using feedback from the OLAP database system (see Brickell et al. 2:62-3:15).

As to claim 8, 17, and 25, Bakalash et al. as modified teaches wherein the performance analysis system compares statistics for queries using identical characteristics that are obtained before and after creation of a proposed summary table (see Brickell et al. 2:62-3:15).

As to claim 9, 18, and 26, Bakalash et al. teaches further comprising an evaluation system that automatically deletes low performing summary tables (see Brickell et al. 4:5-10 and 7:5-10).



As to claims 10 and 19, see the rejection to claim 1 above.

8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bakalash et al. (US Patent 6,385,604) in view of Brickell et al. (US Patent 6,678,676), in view of Witkowski et al. (US Patent 7,379,933), and further in view of Dias et al. (US Patent 6,317,778).

As to claim 4, Bakalash et al. as modified teaches the method of claim 1.

Bakalash et al. as modified does not explicitly teach wherein the combination of time saved and summary table size is a multiplication of time saved and summary table size.

Dias et al. teaches wherein the combination of time saved and summary table size is a multiplication of time saved and summary table size (see 5:32-46. Division is a type of multiplication (ie multiplication by an inverse).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Bakalash et al. by the teachings of Dias et al., since Dias et al. teaches that “Based on a chosen metric, measuring system performance, scores or desirability values may be calculated and assigned to objects. Desirability values may provide an evaluation (or an estimate) of improved system performance resulting from replacement and/or duplication of an object in a cache” (see 5:4-9). In addition to this, it would have been obvious to one of ordinary skill at the time the invention was made to have modified Bakalash et al. by the teachings of Dias et al.

to include this feature to normalize the time saved by the size as they both effect the performance of the system and thus the measure would be more accurate.

### ***Response to Arguments***

9. Applicant's arguments with respect to claims 1, 10, and 19 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHARLES D. ADAMS whose telephone number is (571)272-3938. The examiner can normally be reached on 8:30 AM - 5:00 PM, M - F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Rones can be reached on (571) 272-4085. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. D. A./  
Examiner, Art Unit 2164

/Charles Rones/  
Supervisory Patent Examiner, Art Unit 2164